EXPLORER ST 3.0L HIGH PRESSURE WASTEGATE ACTUATOR KIT

INSTALLATION INSTRUCTIONS

FORD Explorer ST ECOBOOST 3.0L 20-23	PART #3 030 521

MANUALS ALSO AVAILABLE ONLINE AT CRPENGINEERING.COM

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION

THIS PRODUCT IS LEGAL IN CALIFORNIA FOR RACING VEHICLES ONLY, WHICH MAY NEVER BE USED UPON A HIGHWAY, UNLESS AN EO# IS LISTED.

CR PERFORMANCE ENGINEERING INC.
BROMONT, QC, CANADA, J2L 1M5
CRPENGINEERING.COM | SALES@CRPENGINEERING.COM | 1-888-909-1320

KIT CONTENTS

HIGH PRESSURE WASTEGATE ACTUATOR KIT

Qty: 2 x Stainless High Pressure Booster Spring
Qty: 1 x Long Actuator Aluminum Spacer
Qty: 2 x High Temperature Black Washers
Qty: 2 x Stainless M6 Flange Nuts
Qty: 2 x Stainless M6 Nuts
(Actuators are not included, this kit is to modify your existing set.)

Note: If you believe you are missing any components shown above, please contact us at Sales@CRPEngineering.com

ESTIMATED INSTALL TIME

PROFESSIONAL INSTALLATION IS RECOMMENDED

15-30 Minutes with Turbochargers on Bench.

ACUTATOR BOOSTER KIT INSTALLATION

The following kit falls under our Racing Components product line, and is not for typical street use.

Note there is minimal advantage on a stock turbocharger, this kit is best suited to CRP Stage 4 or 5 turbochargers and E50 or E85 Fuel.

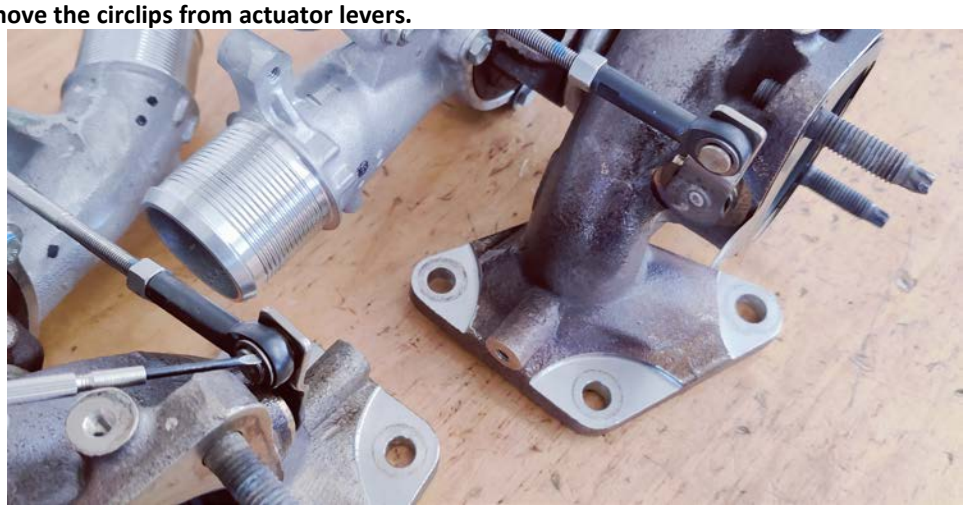
IMPORTANT NOTICE: **Failure to install to specifications can cause damage or failure of the turbochargers, this type of damage is not covered by warranty. Turbocharger overspeed conditions caused by setting too high of a wastegate actuator preload pressure is also not covered by warranty. It is you and your tuners responsibility to assure the actuation system is fully operational to regulate and control peak turbo RPM. We recommend at minimum testing at idle confirming the actuator control system can open the wastegates correctly for the full range with the added preload before and during typical use. Bench testing for correct actuator motion is mandatory once installed on the turbocharger set seen at the end of these instructions.**

IMPORTANT NOTICE: **A Tune to support this product is needed, assure to work with your Tune supplier to provide proper wastegate function. As always, a supporting tune is needed with adequate fuel flow to avoid lean conditions and or poor performance with performance turbochargers.**

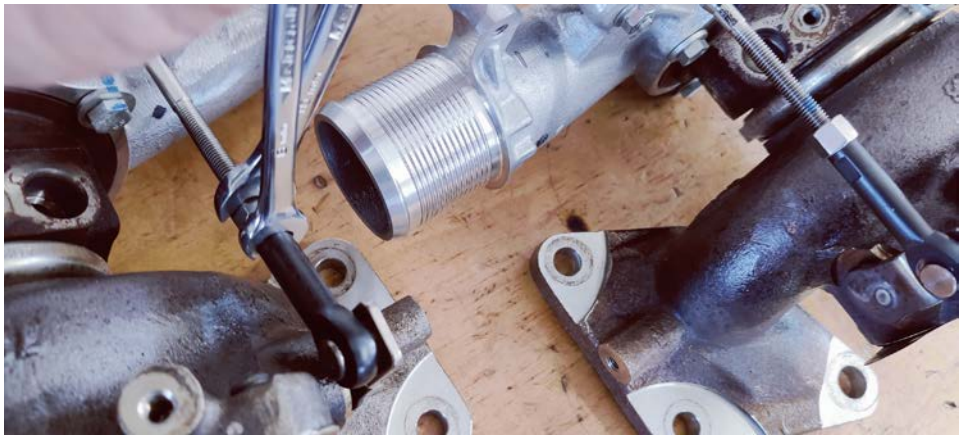
1. Removal of Actuators

1. **Place the turbo set on the workbench as shown.**

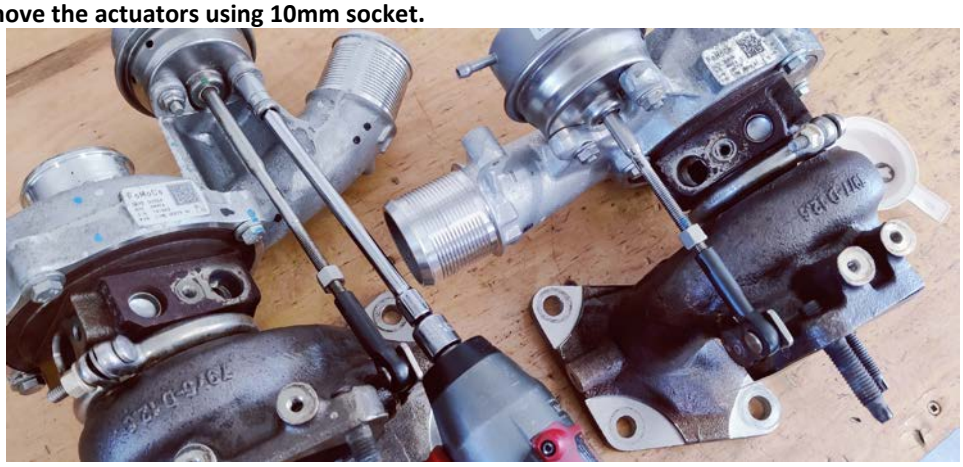
2. Remove the circlips from actuator levers.



3. loosen the lock nuts on the actuator end rods. 10mm 8mm wrench.



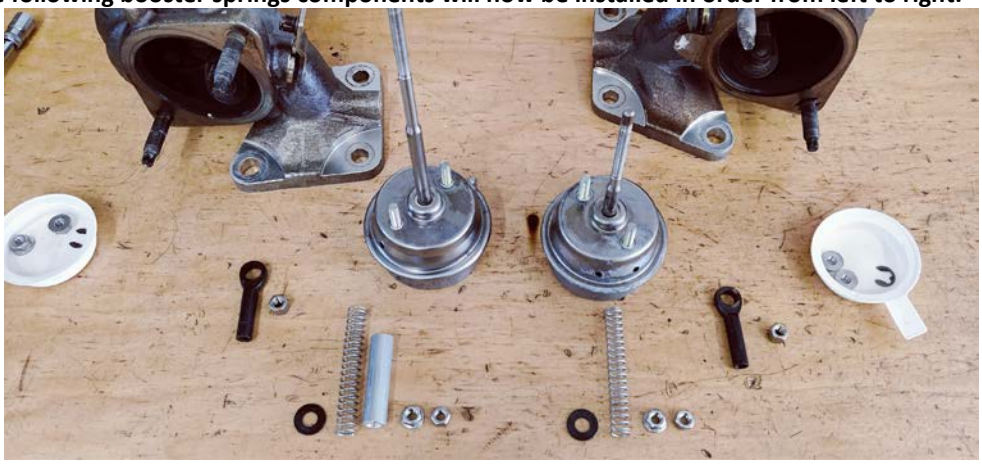
4. Remove the actuators using 10mm socket.



5. Remove the actuators end rods and lock nuts.

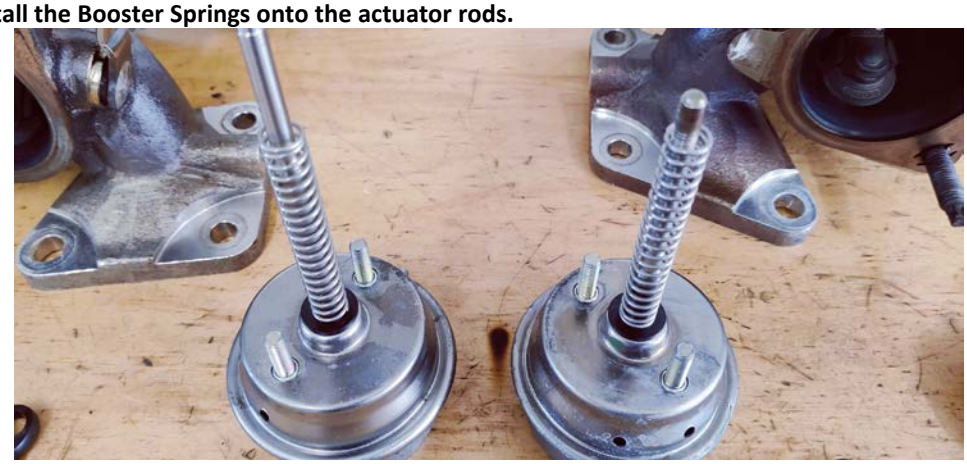
2. Installation

1. The following booster springs components will now be installed in order from left to right.



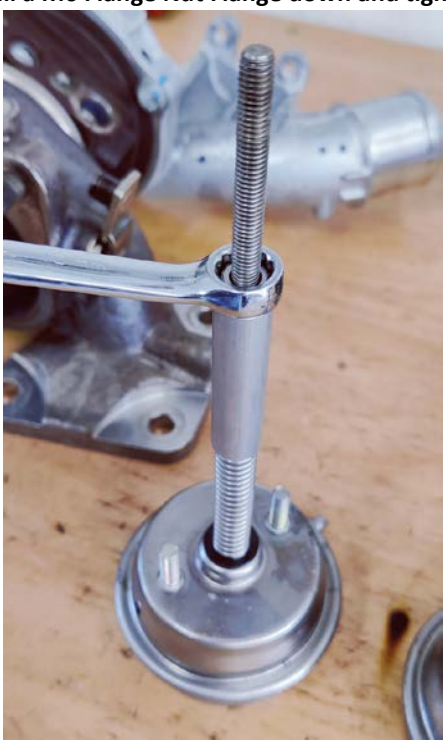
2. Install the High Temp black washers onto the actuator rods.

3. Install the Booster Springs onto the actuator rods.



4. Install the Aluminum spacer onto the long actuator rod with the larger ID down towards the actuator housing.

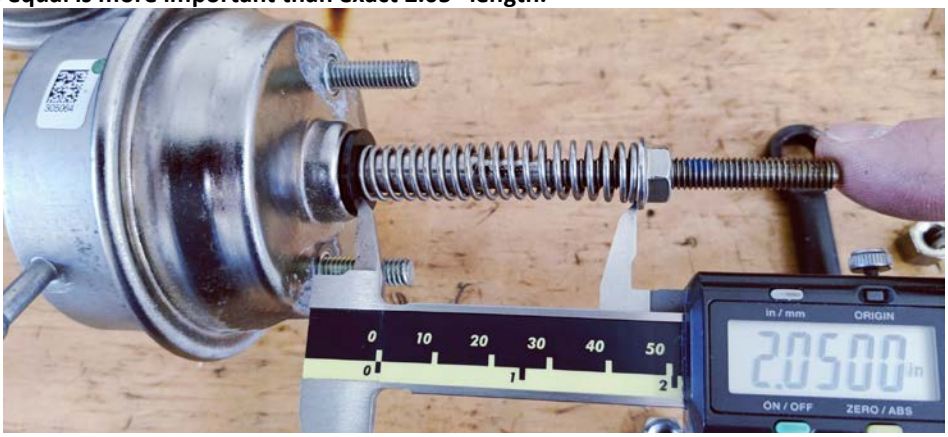
5. Install a M6 Flange Nut Flange down and tighten until bottomed out on the actuator rod threads.



6. Confirm length is approximately 2.05” of the spring installed.

7. Install a M6 Flange Nut Flange down and tighten until the spring length is 2.05” or Equal to the other side. Having both sides equal is more important than exact 2.05” length.

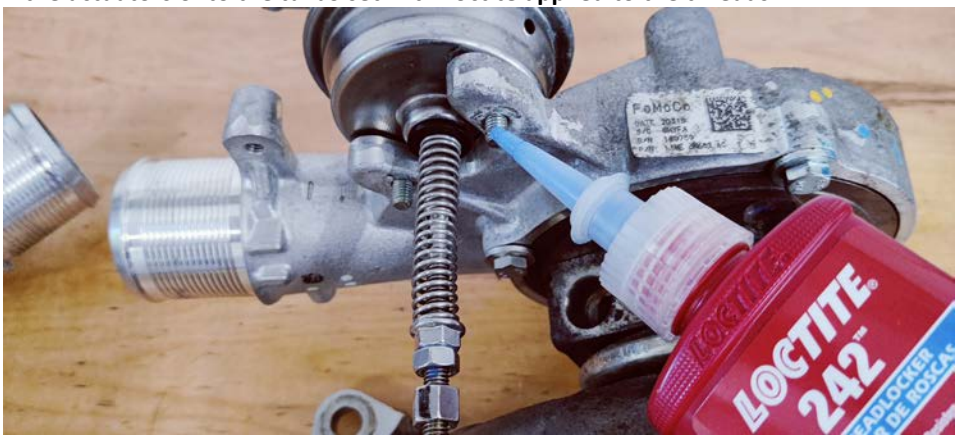
8. Confirm length is approximately 2.05” of the spring installed / equal to the other side. Having both sides equal is more important than exact 2.05” length.



9. Apply Loctite 242 or equivalent to the threads and add the M6 as a lock nut.

10. Install the rod end lock nuts, then install the rod ends approximately 4 revolutions. These will be set in the next steps.

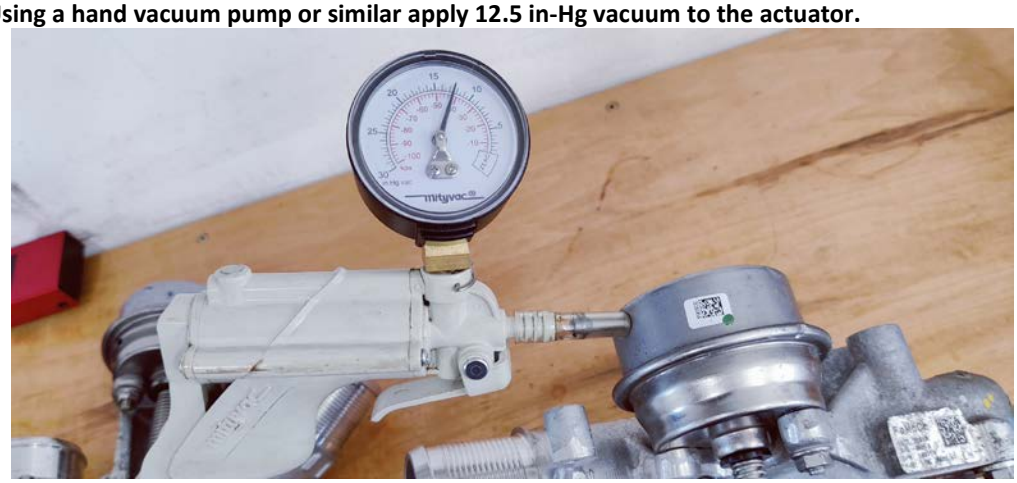
11. Install the actuators onto the turbo set with Loctite applied to the threads.



12. Torque the 2 mounting nuts each side to 85 in-lb.

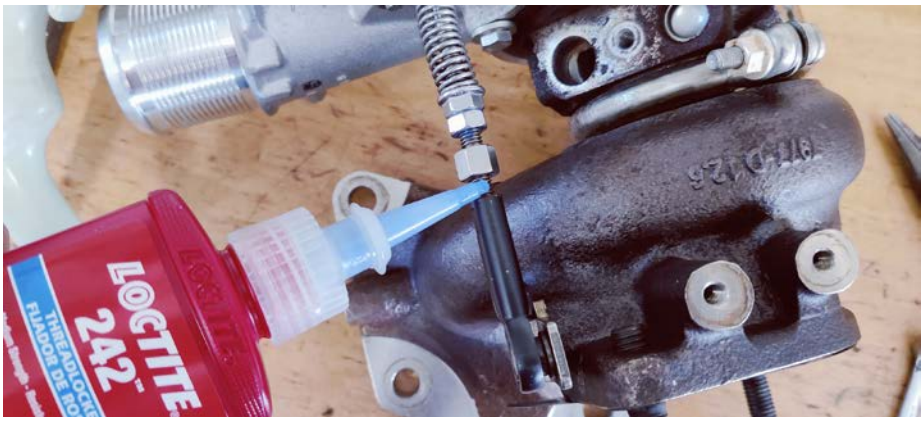
3. Set Actuators Final Preload (12.5 in-HG Recommended)

1. Using a hand vacuum pump or similar apply 12.5 in-Hg vacuum to the actuator.



2. with 12.5 in-Hg vacuum applied to the actuator, and holding the wastegate lever shut. Adjust the rod end until it slides onto the wastegate lever.

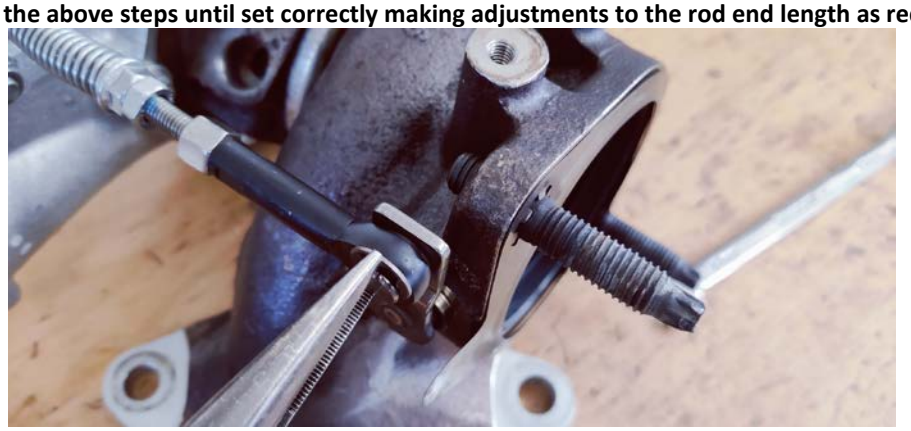
3. Apply Loctite to the threads.



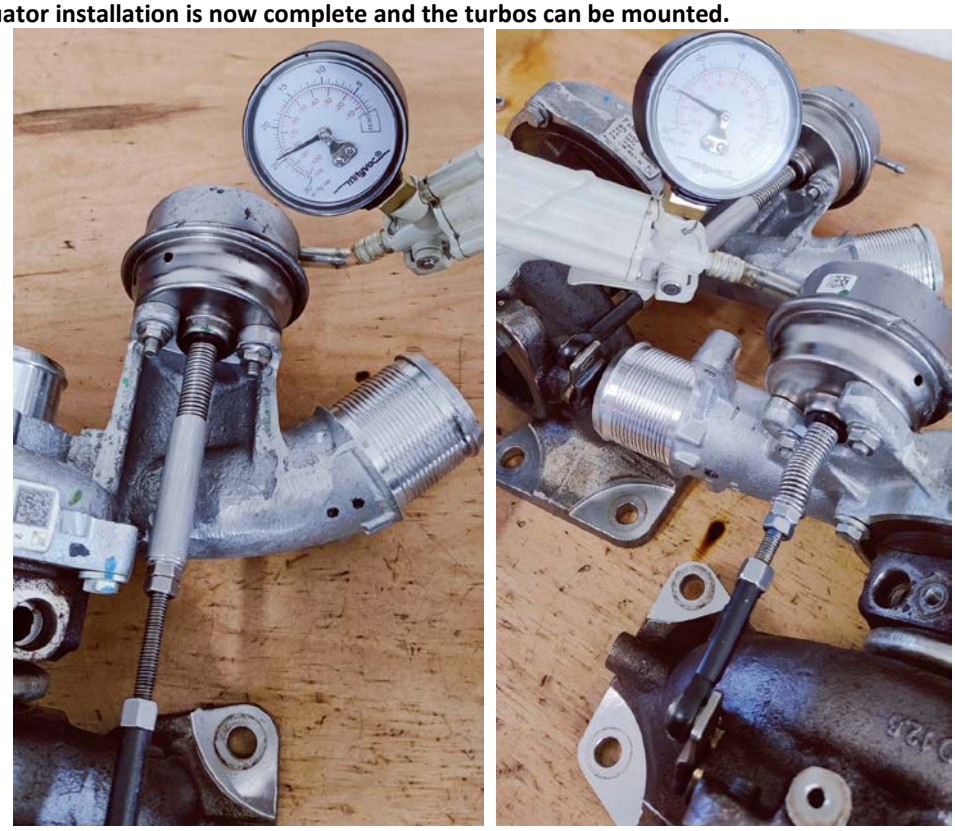
4. Tighten the lock nut onto the rod end and remove vacuum.

5. Apply vacuum slowly to the actuator and keep increasing till 20 in-Hg, motion should start at 12.5 in-Hg vacuum / opening pressure. You can check visually or tap on the wastegate puck with a finger to easily identify when the actuator begins to open the wastegate as it will start to rattle against the turbine housing when released.

6. If preload is correct and releasing the wastegate at 12.5 in-Hg vacuum, install the snap rings, if not repeat the above steps until set correctly making adjustments to the rod end length as required.



7. **Once the above is compete, Apply slowly up to 25 in-Hg vacuum, The actuators should fully open the wastegate and stop motion at ~25 in-Hg or slightly lower. Cycle both twice to confirm. Wastegate actuator installation is now complete and the turbos can be mounted.**



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- Booster Springs were bench tested to preload / opening vacuum of 14 in-Hg applied to the actuator with proper motion, however preload of 12.5 in-HG is recommended. Some variance in actuators will leave minimal rod end thread engagement at higher preloading.

THANK YOU AND PLEASE CONTACT US IF YOU HAVE ANY INSTALL QUESTIONS
SALES@CRPENGINEERING.COM